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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,073	03/30/2004	Jose Renato Santos	100201443-2	5483

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EXAMINER	
QURESHI, AFSAR M	

ART UNIT	PAPER NUMBER
2616	

NOTIFICATION DATE	DELIVERY MODE
08/04/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/814,073	SANTOS ET AL.	
	Examiner	Art Unit	
	AFSAR M. QURESHI	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 May 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is responsive to an Appeal Brief Filed on 5/12/2008. Drawings with descriptive labels are made of record.

2. In view of the appeal brief filed on 5/12/2008, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

/William Trost/

SPE, Art Unit 2616

Response to Arguments

3. Applicant argued that cited reference, Ha, US Patent No. 7,136,353, teaches only "...adjusting the window limit,... not rate limit. Ha does not even discuss rate limit", (Appeal Brief, page 11). Applicant further concluded that, based on Argument, all limitations of independent claim and its dependent claims are not anticipated by Ha (page 11).

Applicant repeated the same arguments for claims 13 and 17. Subject matter for any dependent claims thereon was not cited or discussed.

4. Applicant's arguments, as above, with respect to the rejection(s) of claim(s) 1-20 under 35 U.S.C. 102 (e) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of new found secondary reference in the same field of endeavor.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ha et al. ('**Ha**' hereinafter), US 7,136,353 in view of Galand et al. ('**Galand**' hereinafter),

US 6,424,624.

Regarding claims 1, 13, 17 Ha teaches a method and system for controlling congestion in a communications network to improve quality of service comprising:

receiving congestion feedback data (response) relating to network (following TCP communication protocol),

adjusting at least one of a window limit based on congestion feedback data (see Fig. 1, col. 3, lines 48 through col. 4) wherein TCP communication protocol participates in congestion control by setting a value that dictates the maximum congestion window size before the growth rate of the congestion window size slows down, and injecting data packets onto network according to *window limit* and regulating the number of packets that may be sent to receiver (see lines 1-25, Col. 6, lines 54-59). Ha further discloses window regulating the number of packets that may be sent to receiver upon detection of congestion (see col. 9, lines 63-66, see col. 13, lines 19-23, also, col. 17, lines 41-44).

Ha does not specifically disclose adjusting rate limit based on the congestion feedback data.

Galand, in the same field of endeavor, discloses a system and methods performing congestion detection and flow control by applying *rate limit* utilizing 'rate increase factor (RIF)' and/or 'rate decrease factor (RDF)' (see col. 8, lines 17-28). Galand also discloses a leaky bucket controlling transmission rate (see col. 9, lines 11-22).

Therefore it would have been obvious to one of ordinary skill in the art, at the time of invention, to be able to modify Ha by incorporating flow control operating algorithms, disclosed by Galand, in order to provide a mechanism for dropping the transmission rate on the congested path and then enable a slow full rate thereby adjusting both window limit and rate limit based on congestion feedback. Both Ha and Galand are concerned with improving congestion control.

Regarding claims 2, 14 and 18. As discussed in the rejection of claim 1 above, Ha teaches adjusting window limit and Galand teaches increasing and/or decreasing rate limit if network is determined to be congested based on congestion feedback data (Ha- see Fig. 5B, step 522, Col. 10, line 64 to Col. 11, line 28 Galand – col. 8, lines 17-28). Therefore it would have been obvious to one of ordinary skill in the art, at the time of invention, to utilize Galand's teachings and modify Ha such that rate limit, in addition to window limit, can also be adjusted based on above feedback by Ha. By adding rate limit technique, of Galand, transmission rate can be controlled accordingly, as desired by Ha.

Regarding claims 3, 15, and 19. Ha further teaches increasing, based on a limiting factor, at least one of window limit if network is determined not to be congested (see Fig. 5B, step 516, Col. 10, line 64 to Col. 11, line 28). Ha does not disclose increasing or decreasing rate limit, however, as discussed in the rejection of claim 1 above Galand discloses RIF and RDF based on congestion feedback data (see col. 8, lines 17-28). Therefore it would have been obvious to one of ordinary skill in the art,

at the time of invention, to be able to modify Ha by allocating RIF and/or RDF factors in order to control transmission rate based on detected congestion.

Regarding claims 4, 5, 11, 16, and 20. As to claims 4, 16 and 20, Ha discloses window limit by increasing or decreasing the window size, as discussed in the rejection of claim 1 above, but fails to disclose rate limiting factor (see Fig. 6, step 612, Col. 12, line 57 to Col. 13, line 28-55). Ha is also silent in reference to decreasing the rate limit factor by the corresponding amount if the transmission of a data packet was limited by the rate limit, as in claims 5 and 11.

However, as discussed above, in the rejection of claim 1, Galand discloses rate limiting factors, such as, rate increase factor (RIF)' and/or 'rate decrease factor (RDF)' (see col. 8, lines 17-28), and other algorithms including leaky bucket (see col. 9, lines 11-22). These limiting factors are determined based on quantile of predefined peak rate and/or actual rate. Therefore, it would have been obvious to one of ordinary skill in the art, at the time of invention, to be able to adjust (increase or decrease) rate limiting factors by an amount corresponding to the packet size (as in claims 5 and 11) (see col. 8, lines 17-28) in order to regulate flow within available bandwidth and avoid packet loss.

Regarding claims 6 and 10 As discussed above, in the rejection of claim 1, Ha teaches adjusting the window limit by increasing the window size if limiting factor is determined by window limit (see col. 10, line 64 through col. 11, line 28).

Regarding claims 7-9 and 12. Ha further teaches that limiting factor is a value between a predetermined high threshold and a predetermined low threshold and adjusting size of the packet (congestion window controlled by sum of all connection adjustable by host-level variable in predefined range) (See Fig. 2, Col. 7, line 33 to Col. 8, line 6). As to claim 12, Ha does not specifically disclose adjusting rate limit by an Additive Increase Multiplicative Decrease response process. However, as discussed above and in the rejection of claim 1, Galand, discloses several flow control algorithms providing a mechanism for dropping the transmission rate on the congested path *in single large step* and then enable slowly going back to full rate *step by step* (Additive Increase Multiplicative Decrease response process) (see col. 8, lines 12-28).

Therefore, it would have been obvious to one having ordinary skill in the art, at the time of invention, to be able to incorporate the 'additive increase multiplicative decrease of the considered sending rate' at the entry node to prevent any burden from the source user. This will improve quality of service management in bandwidth constrained channel, as desired by Ha (see col. 3, lines 35-40)

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. UZUN et al. (US 2006/0179142).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AFSAR M. QURESHI whose telephone number is

(571)272-3178. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Field Lynn can be reached on (571) 272 2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/William Trost/
Supervisory Patent Examiner, Art Unit 2616

/Afsar M Qureshi/
Primary Examiner
Art Unit 2616

7/16/2008